

In the claims:

1. (Previously amended) A method of controlling and containing copper diffusion during the integration of copper interconnects during the fabrication of integrated circuits, comprising:
 - preparing an inter-level dielectric substrate;
 - depositing a layer of Ru on the inter-level dielectric substrate;
 - depositing a layer of RuO₂ as a diffusion stuffer on the Ru layer;
 - repeating the depositing of a layer of Ru and a layer of RuO₂ at least once; and
 - depositing copper on the RuO₂ layer, wherein multiple layers of Ru and RuO₂ are deposited between the inter-level dielectric substrate and the copper layer.
2. Cancelled.
3. (Currently amended) The method of controlling and containing copper diffusion during the integration of copper interconnects during the fabrication of integrated circuits of Claim 2 1, further comprising depositing the RuO₂ layer(s) on the Ru layer(s) using an atomic layer deposition technique.
4. (Currently amended) The method of controlling and containing copper diffusion during the integration of copper interconnects during the fabrication of integrated circuits of Claim 2 1, further comprising depositing the RuO₂ layer(s) on the Ru layer(s) using a thermal oxidation technique.
5. (Currently amended) The method of controlling and containing copper diffusion during the integration of copper interconnects during the fabrication of integrated circuits of Claim 2 1, further comprising depositing the RuO₂ layer(s) on the Ru layer(s) using an electrochemical technique.
6. (Currently amended) The method of controlling and containing copper diffusion during the integration of copper interconnects during the fabrication of integrated circuits of

Claim 2 1, further comprising depositing the RuO₂ layer(s) on the Ru layer(s) using physical vapor deposition.

7. (Original) The method of controlling and containing copper diffusion during the integration of copper interconnects during the fabrication of integrated circuits of Claim 1, further comprising depositing the RuO₂ layer on the Ru layer using an atomic layer deposition technique.

8. (Original) The method of controlling and containing copper diffusion during the integration of copper interconnects during the fabrication of integrated circuits of Claim 1, further comprising depositing the RuO₂ layer on the Ru layer using a thermal oxidation technique.

9. (Original) The method of controlling and containing copper diffusion during the integration of copper interconnects during the fabrication of integrated circuits of Claim 1, further comprising depositing the RuO₂ layer on the Ru layer using an electrochemical technique.

10. (Original) The method of controlling and containing copper diffusion during the integration of copper interconnects during the fabrication of integrated circuits of Claim 1, further comprising depositing the RuO₂ layer on the Ru layer using physical vapor deposition.

Claims 11-48. Cancelled.